Leica Digisystem xf-Series

Intelligent cable locators & signal transmitters

PART OF HEXAGON

- when it has to be **right**

Leica Geosystems

Leica Digisystem xf-Series
Making cable avoidance easier & safer

Every year site workers are injured due to inadvertently striking buried utilities such as electricity cables or pipes. Obtaining accurate information about the location of buried utilities has never been more essential to protect employees, equipment and infrastructure during any survey or excavation project.

With Leica Geosystems state-of-the-art Digisystem xf-Series locators and transmitters, users can detect buried utilities faster and more accurately than ever before. The Leica Digisystem xf-Series has been specifically designed with long distance tracing in mind. The ability to trace low transmitter frequencies provides a greater tracing range as well as the ability to locate sewer camera inspection systems.

Leica Geosystems Digicat locators make locating underground utilities including power cables, street lighting, telecoms, conductive pipe work, sewer camera inspection systems, easier than ever before. Increasing your safety on-site and ultimately saving you time and money.

Typical users of the Leica Digisystem xf-Series:
- Surveyor specialists
- Utility installation contractors
- Specialist repair contractors
- Gas and electricity companies
- Pipe laying contractors
- Sewer camera inspection contractors

Leica Digisystem xf-Series comprises:
- Digicat 500i/550i xf, 600i/650i xf & 750i xf
- Digitex 100t xf & 300t xf signal transmitters
- LOGiCAT software
- Digitrace and additional accessories

How does the Leica Digicat locate?
The Leica Digicat xf-Series locators locate buried conductive utilities by receiving electromagnetic signals which radiate from them.

The intelligent software interprets the signal data and provides the operator with an audible and visual response to the location and direction of buried utilities. Offering the user additional tracing frequencies of 512 Hz and 640 Hz, makes long distance tracing and the positioning of sewer camera inspection systems a simple task.

Leica Digicat xf-Series benefits:

- State-of-the-art Digital Signal Processing (DSP) technology
- Automatic controls – making the Digicat easy-to-use, requiring minimal user training
- Mode Lock – the Digicat starts in the last mode of operation assisting the survey process
- Hazard Zone feature indicating shallow buried utility in power, 8 kHz, 33 kHz, Auto, 512 Hz and 640 Hz modes
- Built-in test function – allowing operators to test the hardware and software functionality of the Digicat before use
- LCD screen with built-in light sensor, automatically enabling the backlight in dark conditions
- Robust, lightweight design specifically engineered for tough site conditions
- Service Due Indicator supporting planned maintenance schedules or quality systems by displaying a wrench icon after 12 months

The Leica Digicat xf-Series locators have multiple modes of operation allowing users to have maximum control at their fingertips.

Auto Mode
Automatically locates power or radio signals, helping to confirm the presence of utilities upon initial site occupation making cable detection easier and safer.

Radio Mode
Traces signals originating from distant radio transmitters. These signals penetrate the ground and are reradiated by buried conductive utilities.

Power Mode
Locates power signals radiated by energised cables which pose the most significant risk to excavation teams.

Transmitter Modes
Locates a specific signal applied by the Digitex signal transmitter to a metallic underground conductor.

512 Hz & 640 Hz
Enables long distance tracing

8 kHz
Mid-range distance tracing

33 kHz
Standard tracing frequency on avoidance locators, used for everyday site use

Leica Digicat xf-Series

Accurately locating buried utilities for easy and safe cable avoidance

Leica Digicat 500i xf

Features

Mode Lock
The Digicat starts in the last mode of operation assisting the survey process.

Hazard Zone
Buried utilities close to the surface pose a safety risk to site works. The Hazard Zone function provides an additional warning of the close proximity of buried utilities, alerting users to the immediate danger.

Pinpoint Assist
Maintains the highest peak reading obtained on the signal strength indicator. The peak hold time can be adjusted between 0-5 seconds allowing the operator to quickly and accurately pinpoint the utilities position.

Signal Service Indicator (SSI)
Enables the user to trace an individual utility among multiple utilities when using the Digitex signal transmitter. A numeric display shows the highest reading over the utility being surveyed ensuring the user can follow the utility without straying onto another. The SSI mode can also be used to trace the Digimouse Standard Sonde with ease and provides the highest number when positioned directly over it.

Leica Digicat 550i xf – Additional Features

Depth Indication
The Digicat 550i xf features utility depth indication, when used in conjunction with the Digitex signal transmitter or Digimouse Standard Sonde in 8kHz or 33kHz modes. With a single press of the button, operators can determine the depth of the buried utility down to 3 metres or the depth of a sonde down to 12 metres.

Current Level Indication
Displays the amount of current flowing through a utility helping to trace and verify the utility to which the Digitex signal transmitter is connected.

Leica Digicat 600i xf – Additional Features

Data Logging
The Digicat 600i xf records and stores information while in use. Information is recorded every second after completion of the initial start-up routine. These records are stored in the locators memory and can be retrieved and transferred via Bluetooth® to a PC, tablet or mobile phone for analysis. Storage time is approximately 80 hours use.

LOGiCAT Software
Allows you to upload the stored records to view the locators use. Simply upload all records or search by date.

Bluetooth® Connectivity
The Digicat 600i xf locator has the added benefit of Bluetooth® wireless connectivity. It allows the Digicat to integrate seamlessly with mobile mapping technology to log survey data, in addition to enabling wireless Bluetooth® data transfer.

Selectable Bluetooth® Option
Standard format supplied on all Bluetooth® enabled cable locators or a shortened version furthering the integration into GIS solutions.

Leica Digicat 650i xf – Additional Features*

Depth Indication

Current Level Indication

Data Logging

LOGiCAT Software

Bluetooth® Connectivity

Selectable Bluetooth® Option

* All features are described above

Leica Digicat 750i xf – Additional Features

Depth Indication*

Current Level Indication*

Data Logging*

LOGiCAT Software*

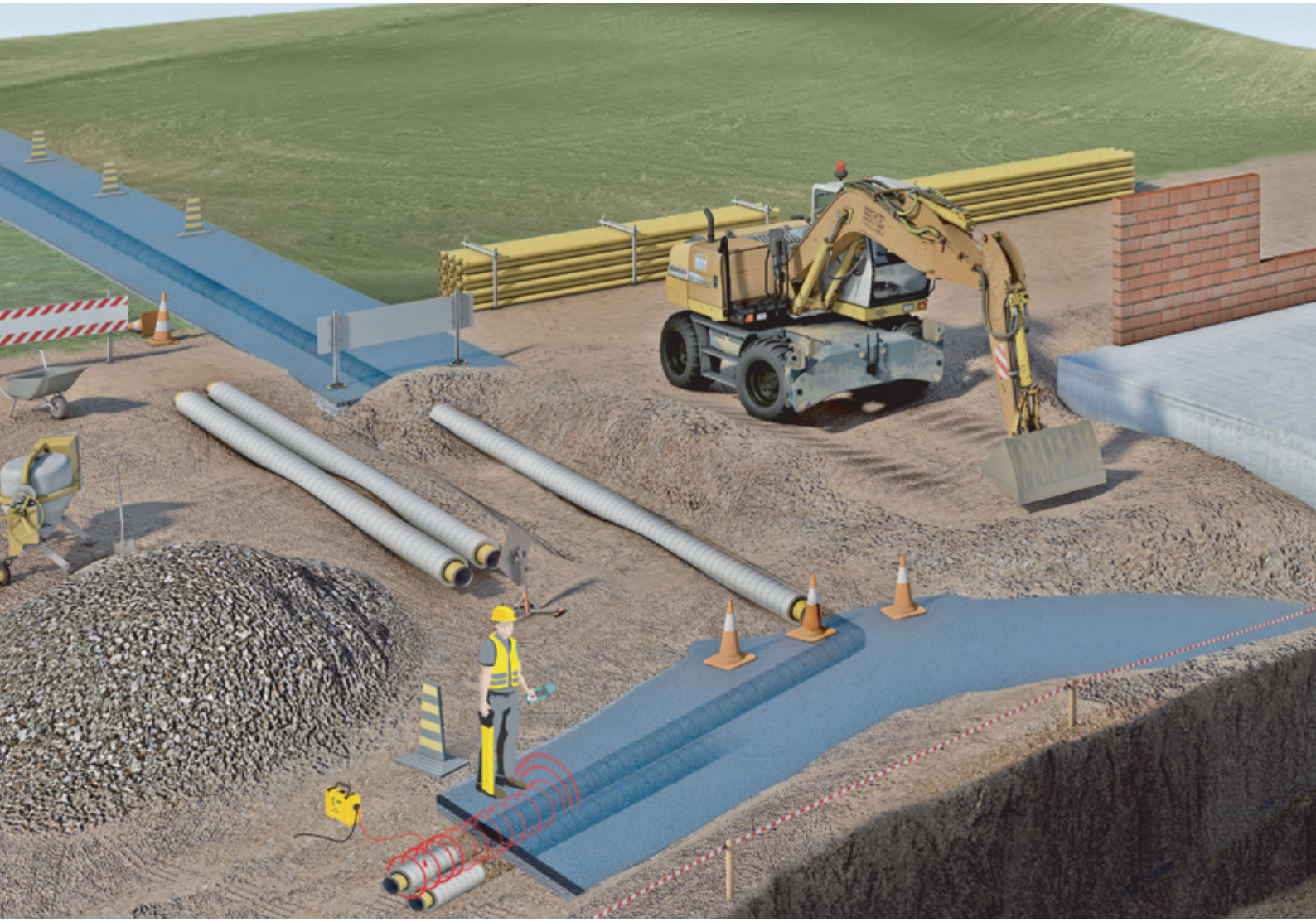
Bluetooth® Connectivity*

Selectable Bluetooth® Option*

Integrated GPS Technology
This captures the data on where the locator has been used. The data is easy to download from the locator to your PC, tablet or mobile phone via Bluetooth® connectivity and using LOGiCAT software. The location information is then displayed visually on an easy to understand map, providing increased confidence in locating results because of greater traceability and visibility of use.

* All features are described above

Leica Digicat 750i xf, 650i xf & GPS Mapping



The Leica Digicat 750i xf, 650i xf and a GIS field controller, such as the Leica Zeno 10 or 15 offer a simple and cost effective solution to utility contractors who are looking to survey and map underground infrastructure such as cables and pipe-work.

The Digicat 750i xf, 650i xf and Digitex signal transmitter are used to provide a depth reading to the centre of the cable or pipe to be surveyed. The depth reading is then transferred to the field controller via Bluetooth® connectivity where the geographical position is added by Leica Zeno field software.

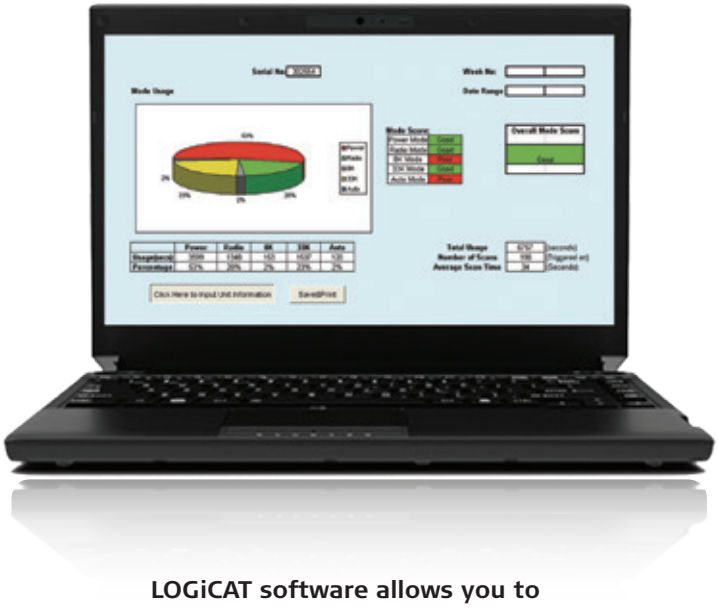
Additional images and comments can be included as part of the survey process including:

1. The type and size of utility
2. Date and time of the survey
3. Maintenance requirements
4. Surveyors site notes

Providing a full data capture facility.

LOGiCAT Software

Simply upload stored records



LOGiCAT software allows you to upload stored records from the Digicat 600i and 700i xf-Series locators. To view the locator's use, simply upload all records or search by date. Upload information includes:

Time and Date
Identifies when and at what time ground surveys were conducted.

Usage Duration
Determines how long survey teams searched for buried utilities and reveals actual product utilisation.

User Identification
Encourages users to become accountable for their actions and identifies those who need additional product training.

Detection Mode
Allows managers to judge the quality and thoroughness of work. As more comprehensive ground surveys are conducted the locator records the mode of operation, including the use of a signal transmitter.

Utility Detection
Discovers quickly if any buried utilities were detected during surveys and even determines the signal strength shown on the locator.

Product Fleet Management
Displays and monitors the service and calibration dates of your locator fleet, ensuring they are kept in perfect working order and not being used when calibration is due.

Diagnostic Check
Displays locators which have failed the EST (Extended Self Test) and removes them
from the active fleet for immediate repair. This reduces the possibility of defective equipment being used on-site.

Management Reports
Produces basic statistical reports from the logged data, allowing users to see how products are utilised and how ground survey teams are using them on-site.

Integrated GPS Technology*
Provides information on where the locator has been used and when downloaded into LOGiCAT the data is displayed visually in an easy to understand map.

* Only available on Digicat 750ixf

Leica Digitex 100t xf & 300t xf
Signal transmitters

The Leica Digitex xf signal transmitters deliver a higher power output than previous models with the addition of extra low tracing frequencies. This improved performance will allow users to:

- Trace utilities over a greater distance
- Improve utility detection in areas of high signal interference
- Improve depth estimation when using a depth locator

Benefits

- Four adjustable power output levels; select the output for site or tracing conditions
- Durable weatherproof design, environmental protection rating of IP67*
- Robust, compact and lightweight design engineered for tough site conditions
- Choice of four tracing signals; select the frequency for site or tracing range
- Ease-of-use, default output frequency of 33 kHz, power level 2
- Clear, audio visual controls, externally mounted, displaying the transmitters output condition
- Built-in test function allowing operators to test the hardware and software functionality before use

Flexibility

Compact design with an IP67* rating, the transmitter is fully protected even in the harshest of conditions.

Leica Digitex 100t xf – Producing up to 1 watt of power
Leica Digitex 300t xf – Producing up to 3 watts of power

Choice of tracing frequencies:

- 512 Hz & 640 Hz – Enables long distance tracing
- 8 kHz – Mid-range distance tracing
- 33 kHz – Standard tracing frequency on avoidance locators, for everyday site use

* with lid closed

Digisystem Accessories

Digitrace
The Digitrace enables non-metallic drains, ducts or pipes to be traced when used in conjunction with the Leica Digicat and Digitex (or other signal transmitters).

The Digitrace 30 metre, 50 metre or 80 metre coiled fibre-glass rod with a metallic tracing wire. The fibre rod is inserted and pushed along the utility under investigation. The Digitex signal transmitter is used to apply a tracing signal which is located by the Digicat.

Signal Clamp (33kHz)
100 mm clamp used in conjunction with the Digitex signal transmitter, with a 33 kHz output, to apply a traceable signal to conductive buried utilities such as cables or pipes.

Multi Clamp (256Hz to 200kHz)
80 mm clamp used in conjunction with the Leica Digitex to apply a traceable signal to conductive buried utilities such as cables or pipes. The Multi Clamp is compatible with Leica Digitex signal transmitters with an output of 512 Hz to 33 kHz.

Property Connection Set
Connection of a tracing signal to any internal power distribution system outlet.

Digimouse Standard Sonde (8 kHz & 33 kHz)
Compact dual frequency sonde used to trace drains, sewers and other non-conductive utilities. Digimouse can be attached to a range of equipment including drain rods, boring tools and inspection cameras. Powered by 1x AA alkaline battery, with a depth range of 5 metres.

MAXiSONDE (8 kHz to 33 kHz)
A 55 mm diameter dual frequency sonde used to trace deep lying drains, sewers and other non-conductive utilities. MAXiSONDE can be attached to a range of equipment including drain rods, boring tools and inspection cameras. Powered by 3 x AA alkaline batteries, with a depth range of 12 metres.

Features	Digitrace 30 / 50 / 80 Article no. 796702 / 796703 / 796704
Protection	Conforms to IP54 (30/50/80 coiled fibre-glass rod with a metallic tracing wire)
Weight	3 kg / 3.25 kg / 3.5 kg

Features	Digimouse Standard Sonde Article no. 731053
Operating transmission frequencies	8.192 kHz, 32.768 kHz
Battery type	1 x LR6 (AA) alkaline
Battery life (Typical use at 20°C)	40 hrs intermittent use at at 20°C/68°F in 8 kHz mode or 33 kHz mode
Weight	0.18 kg
Dimensions	38mm (H) x 120mm (W)

Leica Digisystem xf-Series
Product specifications

Features	Digicat 500i xf Article no. 798640 / 798641	Digicat 550i xf Article no. 798642 / 798643	Digicat 600i xf Article no. 798644 / 798645	Digicat 650i xf Article no. 798646 / 798647	Digicat 750i xf Article no. 821252 / 821253
Frequency / Mode	Power mode 50 Hz or 60 Hz, Radio mode 15 kHz to 60 kHz, Transmitter mode 8 kHz, 33 kHz, 512 Hz and 640 Hz, Auto mode = Power + Radio mode				
Depth detection (typical)	Power to 3m, Radio to 2m Transmitter mode – Dependant on transmitter or Sonde type				
Batteries	6 x AA alkaline (IECLR6), supplied				
Battery life	40 hours intermittent use (at 20°C)				
Weight	2.7 kg including batteries				
Depth estimation	Not available	Line mode – 0.3 to 3m Sonde mode – 0.3 to 9.99m 10% of depth in line or Sonde mode	Not available	Line mode – 0.3 to 3m Sonde mode – 0.3 to 9.99m 10% of depth in line or Sonde mode	Line mode – 0.3 to 3m Sonde mode – 0.3 to 9.99m 10% of depth in line or Sonde mode
Protection	Conforms to IP54	Conforms to IP54	Conforms to IP54	Conforms to IP54	Conforms to IP54
Bluetooth®	Not available	Not available	Enabled	Enabled	Enabled
Compatibility	Not available	Not available	CSV file compatibility program	CSV file compatibility program	CSV file compatibility program
Memory size	Not available	Not available	32 MB memory	32 MB memory	64 MB memory
GIS Mapping capability			X	X	X
Integrated GPS technology					X
GPS type*					Chipset: u-blox®GPS, Technical Data; Type: L1 frequency, C/A code
GPS Accuracy**					2.5m CEP, SBAS 2.0m CEP
GPS start time					Cold 34s typical, Warm 34s typical, Hot 1s typical

* All data/information according to Manufacturer u-blox®GPS; Leica Geosystems does not assume any liability whatsoever for such information
** Accuracy is dependent upon various factors including atmospheric conditions, multipath, obstructions, signal geometry and number of tracked satellites

Features	Digitex 100t xf Article no. 798648	Digitex 300t xf Article no. 798649
8 kHz mode	8.192 kHz	8.192 kHz
33 kHz mode	32.768 kHz	32.768 kHz
Mixed 8/33	8.192 kHz/32.768 kHz	8.192 kHz/32.768 kHz
512 Hz mode	512 Hz	512 Hz
640 Hz mode	640 Hz	640 Hz
Induction (max)	Up to 1W max	Up to 1W max
Direct connection (300 Ohms)	Up to 1W max when connected to a buried utility with an impedance of 300 Ohms	Up to 3W max when connected to a buried utility with an impedance of 300 Ohms
Protection (case lid closed)	IP67	IP67
Working temperature	–20°C to +50°C	–20°C to +50°C
Battery type	4 x D alkaline (IEC LR20), supplied	4 x D alkaline (IEC LR20), supplied
Battery life (typical use at 20C)	30hrs intermittent use	20hrs intermittent use
Weight	2.5kg/5.5lbs including batteries	2.5kg/5.5lbs including batteries
Dimensions	113mm (H) x 206mm (D) x 250mm (W)	113mm (H) x 206mm (D) x 250mm (W)
Extended self test	Induction and Connection Modes	Induction and Connection Modes
Power output levels	4	4

Features	Multi Clamp Article no. 813369	MAXiSONDE Article no. 813368
8 kHz mode	x	x
33 kHz mode	x	x
512 Hz mode	x	
640 Hz mode	x	
Protection	IP54	IP68 submersion level: 3 bar pressure, 30m water
Working temperature	–20°C to + 50°C	–20°C to + 50°C
Battery type	Not Required	3 x LR6 (AA) Alkaline
Weight	820g	830g
Dimensions	56mm (H) x 250mm (D) x 130mm (W) internal diameter 80mm	300mm (L) x 55mm diameter

PROTECT by Leica Geosystems

Because the best products come with the best service

PROTECT by Leica Geosystems

Lifetime Warranty | No Cost Period | Certified Quality | Swiss Technology

Our products are built to last!

Understanding construction and our customers' needs has enabled us to develop product solutions for all positioning, measuring, levelling, aligning and plumbing tasks on-site. Our products provide the highest levels of reliability, accuracy and ruggedness – even under the roughest jobsite conditions, making our customers more productive and successful.

With Protect by Leica Geosystems we offer a best-in-class service where customers can count on us, anytime, anywhere.

Lifetime Manufacturer's Warranty

Warranty coverage for the entire usage time of the product. Free of charge repair or replacement for all products that suffer defects as a result of faults in materials or manufacturing,for the entire life of the product.

No Cost Period

Guaranteed best-in-class service should your product become defective or require servicing under normal conditions of use, as described in the user manual, at no additional charge to you.

Our service includes:

- Repair or replacement of all defective parts,including labour time
- Adjustment and calibration
- Thorough functional test and safety check
- Maintenance, cleaning of product and carrying case

Your serviced product will be returned to you as good as new!

Certified Quality

Leica Geosystems runs calibration laboratories (No. SCS079) and a test laboratory (No. STS549). Both are fully accredited by the SAS, the Swiss Accreditation Service. The calibration and test certificates issued by Leica Geosystems are officially and internationally recognised for horizon, angle, distance, frequency and laser classification. This confirmation of precision guarantees the highest possible reliability for our products. All laboratories are regularly controlled by an independent national institution according to ISO 17025.

Swiss Technology

Swiss Technology creates confidence. Our worldwide operations are in state-of-the-art production centres, where Swiss precision, extraordinary craftsmanship, and cutting-edge technology go hand-in-hand. Continuous and extensive tests throughout all stages of development and production ensure our products meet the highest standards for precision and quality.

We are always there for you.

With a global network consisting of 260 service centres in 87 countries, Leica Geosystems has a powerful network to support you.

Find out more on:
www.leica-geosystems.com/protect

Whenever you need to locate underground utilities, the Leica Digisystem is the right solution. The system ensures fast and accurate location of buried cables and pipes and it increases your on-site safety. The Digisystem is designed on a safety-first philosophy, so we remove the ability for the user to «tune out» signals. The Digisystem tools are rugged and efficient, meeting all the needs of your tracing operations.

When it has to be right.

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Leica Sprinter
Quick, easy and efficient digital levelling

Leica Builder
Not just for foremen

Leica Digisystem i-Series
Safe and fast location of underground utilities

Leica Piper 100/200
The world's most versatile pipe laser

Leica Geosystems AG
Heerbrugg, Switzerland

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- when it has to be **right**

Leica Geosystems